

FINGER GRIP AID

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/409,355 filed September 6, 2002.

FIELD OF THE INVENTION

[0002] The present invention relates to devices for improving the gripping ability of user, and more specifically relates to glove-like devices that can be worn over one or more of the user's fingers as an aid in holding equipment with elongated handles such as golf clubs, or for handling hard to grip items such as balls or drinking glasses.

BACKGROUND OF THE INVENTION

[0003] Grip aids are devices that provide for improved gripping ability, such as by providing a more ergonomic handle or by the positioning of traction improving materials between a user's hand and an object to be gripped. In general, grip aids can be grouped into those that 1) improve the handle of the product to be gripped, and 2) are applied to the user's hand, for example as a glove.

[0004] In general, modification to handles does improve the ability to grip, but handle designs are not versatile enough to cover all conceivable uses or provide a perfect fit for the different hand sizes of different users. Providing better handles is also an expensive way of improving the ability of a user to grip a device. Grip aids that are applied to the hand have the potential to be better tailored to different users, but have other problems. For example, gloves can be bulky and they reduce the sense of touch. Gloves also often cover a large portion or all of the hand, making them both cumbersome and hot to wear. An alternative approach is the application of tapes to the hand. These offer a customizable, topical application but lack proper adhesion to the user under most physical activities and often result in unwanted glue residue.

[0005] In summary, prior grip devices have problems that prevent them be being generally useful. These problems include the lack of general applicability, for example as with an ergonomic handle being useful only for some people or for a small range of motion, the loss of sensitivity, for example with a glove, or by being uncomfortable, as in the case of adhesive grip aids. What is needed is a versatile grip that is relatively topical and that will stay on the finger with little, or no, glue. Preferably, the a grip should provide improved gripping for the user through increased friction with a gripped product and should not greatly reduce the sensitivity of the users fingers.

SUMMARY OF THE INVENTION

[0006] The present invention solves the problems prior art grip aids by providing a sleeve of thin, resilient, elastomeric material that a user fits over one or more fingers. The sleeve preferably has a hole cut in it for a knuckle. In one embodiment of the invention, the sleeve may extend the entire length of the finger from palm to tip, encapsulating the entire finger in compression, except for the hole cut for the knuckle. In another embodiment, the sleeve may only cover a segment of the finger, including a knuckle. The grip aid may also include tightening device, such as wings that wrap around the top of the finger near the knuckle opening. These sleeves may also include textured surfaces to further enhance frictional potential of the device.

[0007] One aspect of the present invention is to provide a finger grip aid that includes a tapered sleeve of a elastomeric material having a first opening at the end thereof and an intermediate opening. The sleeve is so dimensioned as to fit over a user's finger with the first opening at the base of the user's finger and with the intermediate opening centered over a second knuckle of the user's finger. When the sleeve is placed on the user's finger, at least a portion of the sleeve including the first opening compresses the user's finger, and the second knuckle of the user's finger is exposed through the intermediate opening. In one embodiment, the sleeve has a second opening to expose the upper portion of the finger, including the tip. In another embodiment, the sleeve cover the length of the finger. The grip can also include one or more integral tightening elements across said side opening, and can have an outer surface that is textured.

[0008] Another aspect of the present invention is to provide a finger grip aid that includes a tapered sleeve of a elastomeric material having a first opening at the end thereof and an intermediate opening. The said sleeve has the approximate shape of a finger from the base of the finger, at the first opening, to at least a region about the second knuckle of the finger, at said intermediate opening.

[0009] It is one advantage of the present invention to provide an improved grip for a user with a finger grip aid that will survive most strenuous activities.

[0010] It is another advantage of the present invention to provide a grip aid that can be applied only in the areas needed without sacrificing touch, dexterity, comfort, or the adverse affects of glue residue.

[0011] It is yet another advantage of the present invention to provide a finger grip aid that is useful for holding equipment with elongated handles, such as golf clubs, or for gripping with hard to hold items like balls and drinking glasses.

[0012] A further understanding of the invention can be had from the detailed discussion of the specific embodiment below. For purposes of clarity, this discussion refers to devices, methods, and concepts in terms of specific examples. However, the inventive grip may be constructed using materials or using methods other than those described herein, and may be used to grip a wide variety of types of devices. It is therefore intended that the invention not be limited by the discussion of specific embodiments.

[0013] Additional advantages of the present invention will become apparent from the description of preferred embodiments set forth below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] Additional advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings, in which:

[0015] **FIG. 1** is a palm view of a human hand;

[0016] **FIG. 2** is a side view of a human finger;

[0017] **FIG. 3** is palm view of a first embodiment of the invention in which the sleeve covers only part of the finger;

[0018] **FIG. 4** is a side view of the first embodiment of the invention;

[0019] **FIG. 5** is palm view of a second embodiment of the invention in which the sleeve covers all of the finger except for the knuckle hole;

[0020] **FIG. 6** is a side view of the second embodiment of the invention;

[0021] **FIG. 7** is palm view of a third embodiment of the invention in which the sleeve covers only part of the finger and includes a tightening device, not visible in the palm view; and

[0022] **FIGS. 8A-B** are side views of the third embodiment of the invention, where FIG. 8A shows the finger grip aid on a finger, and FIG. 8B shows the finger grip aid with the integral tightening wing wrapped about the aid.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The present invention relates to a finger grip aid for use while holding equipment with elongated handles like golf clubs or, with hard to grip items like balls and drinking glasses. To facilitate its description, the invention is described below in terms of embodiments having specific configurations. Those skilled in the art will appreciate that various changes and modifications can be made to the exemplary embodiments while remaining within the scope of the present invention.

[0024] A first embodiment of the present invention is described in relation to FIGS. 1-2. FIG. 1 is an illustration of a human hand. A hand **10** has a palm region **12** and five digits: four digits **14a**, **14b**, **14c**, and **14d**, and a thumb **14e**. The four digits each include a first section **141** extending from the base of the finger to a second knuckle **144**, a second section **142** that extends from the second knuckle to a first knuckle **145**, and a

third section **143** that extends from the first knuckle to a tip **146**. Thumb **14e** includes two sections, a knuckle and a tip. The reference numbers for each section, knuckle and tip includes a letter a-e indicative of digit. FIG. 2 is an illustration of the side profile of a human finger.

[0025] In FIGS. 3 and 4 a first embodiment of a finger grip aid **20** is shown, where FIG. 3 is a palm view and FIG. 4 is a side view. A sleeve **22** has a first edge **21**, a second edge **25**, and has a hole **23** between the two edges. Finger grip aid **20** can fit over any one of fingers **14a-14d**. As an illustrative example, FIGS. 3 and 4 show finger grip aid **20** on finger **14b**. Finger grip aid **20** is situated with edge **21** proximal palm **12** at the intersection of finger **14b** with the palm, with edge **25** distal the palm and near the middle of the second section **142b**, and with hole **23** placed over second knuckle **144b**. The sleeve is made of a thin, resilient, but elastomeric material that can be slid over the end of a finger towards the palm. When positioned as shown in FIGS. 3 and 4, aid **20** is held onto the finger by compression of the sleeve. Edge **21** is preferably tapered and tucked into the crease of skin between palm **12** and finger **14b** during a gripping posture of a handle (not shown). This placement reduces the probability of the edge getting caught by the tool being handled, and getting ripped, or rolled off the finger. Knuckle **144b** also helps to hold the sleeve in place during a gripping motion by poking through the associated hole **23** cut in the sleeve.

[0026] FIGS. 5 and 6 illustrate a second embodiment of the invention as a palm view and side view, respectively. A finger grip aid **20'** can fit over any one of fingers **14a-14d**. As an illustrative example, finger grip aid **20'** is shown covering finger **14b**. Aid **20'** includes a sleeve **22'** having an edge **21'**, a closed end **25'**, and a hole **23'** between the edge and end. Aid **20'** is shown placed on finger **14b** with edge **21'** at palm **12** and with closed end **25'** enclosing the tip **146b** of the finger. Sleeve **22'** also positioned such that hole **23'** accommodates second knuckle **144b**.

[0027] FIG. 7 illustrates a third embodiment of the invention as a palm view. FIGS. 8A and B show a side view of the third embodiment before and after tightening an integral tightening device, respectively. A finger grip aid **20''** is shown covering finger

14b. Aid **20''** includes a sleeve **22''** having a proximal edge **21''** and a distal edge **25''** and a hole **23''** between the two edges. FIG. 8 shows aid **20''** positioned on finger **14b** with edge **21''** at palm **12** and with edge **25''** at the middle of the second section **142b** of the finger. Aid **20''** includes an integral tightening device **24** that wraps around and overlap the top finger just above a knuckle hole **23''**. Device **24**, shown prior to wrapping about the finger in FIG. 8A, has a wing **24a** and a wing-receiving portion **24b** on sleeve **22''**. By pulling wing **24a** tight about the finger, aid **20''** can be more securely held onto the finger, as shown in FIG. 8B. The amount of compression that device **24** provides for holding aid **20''** on the finger can be further controlled through the use of an elastomeric material for wing **24a**.

[0028] Wing **24a** can be held on receiving portion **24b** through an adhesive, or by mutually sticking surfaces, such as VELCRO®. Device **24** is preferably tightened in a reusable fashion with wing **24a** and receiving portion **24b** adapted such that they can be repeatedly tightened, loosened or adjusted by the user.

[0029] Various alternative embodiments include, but are not limited to, various lengths of sleeves, 2 or more sets of wings, or the use of textured surfaces to enhance friction. Finger grips can be tailored to fit on any of the fingers, including the thumb. Any type of friction enhancing elastomer could be utilized for the invention, however, latex rubber has been found to be a very good material. Amount of friction, size and thickness of the sleeve may vary by use and user.

[0030] Having disclosed exemplary embodiments, modifications and variations may be made to the disclosed embodiments while remaining within the scope of the invention as described by the following claims.